

APPLICATION

FOR UNITED STATES LETTERS PATENT

SPECIFICATION

TO ALL WHOM IT MAY CONCERN:

BE IT KNOWN THAT WE, **Robert H. Ray**, a citizen of the United States, and
Patricia L. Shores, a citizen of the United States, have invented a new and useful pole
anchor footing system of which the following is a specification:

1
2
3 **Pole Anchor Footing System**
4
5

6 **CROSS REFERENCE TO RELATED APPLICATIONS**

7 I hereby claim benefit under Title 35, United States Code, Section 119(e) of
8 United States provisional patent application Serial Number 60/460,647 filed April 4,
9 2003. The 60/460,647 application is currently pending. The 60/460,647 application is
10 hereby incorporated by reference into this application.
11
12

13 **STATEMENT REGARDING FEDERALLY**
14 **SPONSORED RESEARCH OR DEVELOPMENT**

15 Not applicable to this application.
16
17

18 **BACKGROUND OF THE INVENTION**
19
20
21

22 **Field of the Invention**
23

24 The present invention relates generally to post supports and more specifically it
25 relates to a pole anchor footing system for effectively supporting a post structure
26 within a ground surface.
27
28

Description of the Related Art

Post structures have been in use for years. Conventional posts are typically comprised of wood, metal or other structure that is directly inserted into the ground surface. Regardless of the material utilized to construct the post, the post typically has a uniform cross sectional shape (e.g. square, rectangular, circular) and size.

The main problem with wood posts is that they are treated with potentially toxic and hazardous chemicals that can enter the ground. A further problem with wood and metal posts is that they can be relatively expensive to construct with sufficient length to be inserted into the ground surface. Another problem with wood and metal posts is that they deteriorate over extended periods of time. A further problem with wood and metal posts is that they tend to “climb” upwardly out of the ground and twist within the ground particularly in unstable ground surfaces (e.g. sand, wet, soft, etc.). Another problem with wood and metal posts is that they are relatively rigid providing little deflection when the post encounters above-ground forces such as wind, snow and other forces.

While these devices may be suitable for the particular purpose to which they address, they are not as suitable for effectively supporting a post structure within a ground surface. Conventional posts do not efficiently and effectively support themselves within various ground surface conditions.

In these respects, the pole anchor footing system according to the present invention substantially departs from the conventional concepts and designs of the prior art, and in so doing provides an apparatus primarily developed for the purpose of effectively supporting a post structure within a ground surface.

1
2 **BRIEF SUMMARY OF THE INVENTION**
3

4 In view of the foregoing disadvantages inherent in the known types of post
5 structures now present in the prior art, the present invention provides a new pole
6 anchor footing system construction wherein the same can be utilized for effectively
7 supporting a post structure within a ground surface.
8

9 The general purpose of the present invention, which will be described
10 subsequently in greater detail, is to provide a new pole anchor footing system that has
11 many of the advantages of the post structures mentioned heretofore and many novel
12 features that result in a new pole anchor footing system which is not anticipated,
13 rendered obvious, suggested, or even implied by any of the prior art post structures,
14 either alone or in any combination thereof.
15

16 To attain this, the present invention generally comprises a resilient body having
17 a neck portion and a base portion, and an elongate member extending into the body
18 from an upper end of the body. The body is securely positionable within a ground
19 surface. The neck portion receives a coupler that mechanically connects a post to the
20 body. The base portion has an upwardly tapered structure with the lower end having a
21 broad structure. A plurality of engaging members may extend outwardly from the
22 body for providing additional gripping while positioned within the ground surface.
23

24 There has thus been outlined, rather broadly, the more important features of the
25 invention in order that the detailed description thereof may be better understood, and
26 in order that the present contribution to the art may be better appreciated. There are
27 additional features of the invention that will be described hereinafter and that will form
28 the subject matter of the claims appended hereto.
29

1 In this respect, before explaining at least one embodiment of the invention in
2 detail, it is to be understood that the invention is not limited in its application to the
3 details of construction and to the arrangements of the components set forth in the
4 following description or illustrated in the drawings. The invention is capable of other
5 embodiments and of being practiced and carried out in various ways. Also, it is to be
6 understood that the phraseology and terminology employed herein are for the purpose
7 of the description and should not be regarded as limiting.

8
9 A primary object of the present invention is to provide a pole anchor footing
10 system that will overcome the shortcomings of the prior art devices.

11
12 A second object is to provide a pole anchor footing system for effectively
13 supporting a post structure within a ground surface.

14
15 Another object is to provide a pole anchor footing system that is
16 environmentally safe.

17
18 An additional object is to provide a pole anchor footing system that may be
19 subjected to significant forces without damage to the footing structure within the
20 ground.

21
22 Another object is to provide a pole anchor footing system that is capable of
23 flexing when encountering an aboveground force.

24
25 A further object is to provide a pole anchor footing system that is not
26 susceptible to climbing or twisting within a ground surface.

1 An additional object is to provide a pole anchor footing system that may be
2 utilized in conjunction with various post coupler systems for supporting an
3 aboveground post.

4
5 Another object is to provide a pole anchor footing system that may be utilized
6 within various types of ground surfaces such as but not limited to sand, wet, soft and
7 the like.

8
9 Other objects and advantages of the present invention will become obvious to the
10 reader and it is intended that these objects and advantages are within the scope of the
11 present invention.

12
13 To the accomplishment of the above and related objects, this invention may be
14 embodied in the form illustrated in the accompanying drawings, attention being called
15 to the fact, however, that the drawings are illustrative only, and that changes may be
16 made in the specific construction illustrated and described within the scope of the
17 appended claims.

1

2 **BRIEF DESCRIPTION OF THE DRAWINGS**

3

4 Various other objects, features and attendant advantages of the present
5 invention will become fully appreciated as the same becomes better understood when
6 considered in conjunction with the accompanying drawings, in which like reference
7 characters designate the same or similar parts throughout the several views, and
8 wherein:

9

10 FIG. 1 is an upper perspective view of the present invention.

11

12 FIG. 2 is an upper perspective view of the present invention with a post
13 attached.

14

15 FIG. 3 is an exploded upper perspective view of the present invention.

16

17 FIG. 4 is a side view of the present invention.

18

19 FIG. 5 is a side view of the present invention with a post attached with the
20 present invention positioned within a ground surface.

21

22 FIG. 6a is an upper perspective of an exemplary elongate member and cap
23 member.

24

25 FIG. 6b is an upper perspective view of a second exemplary elongate member
26 and cap member.

27

28 FIG. 7 is an upper perspective view of an alternative embodiment of the present
29 invention.

1

2 FIG. 8 is a side view of the alternative embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

A. Overview

Turning now descriptively to the drawings, in which similar reference characters denote similar elements throughout the several views, FIGS. 1 through 8 illustrate a pole anchor footing system 10, which comprises a resilient body 20 having a neck portion 22 and a base portion 26, and an elongate member 40 extending into the body 20 from an upper end 24 of the body 20. The body 20 is securely positionable within a ground surface. The neck portion 22 receives a coupler 14 that mechanically connects a post 12 to the body 20. The base portion 26 has an upwardly tapered structure with the lower end having a broad structure. A plurality of engaging members 28 may extend outwardly from the body 20 for providing additional gripping while positioned within the ground surface.

B. Resilient Body

Figures 1 through 5 best illustrate the resilient body 20. The body 20 is positionable within a ground surface as shown in Figure 5 of the drawings. The body 20 is preferably comprised of a resilient and elastic material such as but not limited to rubber, recycle rubber and the like. The body 20 is preferably comprised of a solid structure, however various other structures may be utilized to construct the body 20 that are not solid.

The body 20 may have various flexing capabilities depending upon the desired application. The flexing characteristics of the body 20 may be varied by utilizing different materials, different particle sizes, reinforcements, different binders and different molding pressures.

1 The body **20** preferably has a non-circular cross section to reduce twisting
2 within the ground surface such as but not limited to square, rectangular, triangular,
3 polygonal, oval and the like. The body **20** preferably has a height sufficient to be
4 buried within the ground surface while allowing the attachment of the post **12** as
5 shown in Figure 5 of the drawings.

6
7 As best shown in Figures 1 and 4 of the drawings, the body **20** has a neck
8 portion **22** and a base portion **26** supporting the neck portion **22**. The base portion **26**
9 has an upwardly tapered structure as best shown in Figure 4 of the drawings. More
10 particularly, the base portion **26** has a lower broad end and an upper portion opposite
11 of the lower broad end as shown in Figure 4 of the drawings. The lower broad end of
12 the base portion **26** prevents “climbing” of the body **20** when the post **12** encounters
13 above-ground forces such as wind, snow, vehicles and the like.

14
15 As shown in Figures 1 and 4 of the drawings, the base portion **26** preferably has
16 a plurality of polygonal sides which may have various shapes and sizes. The base
17 portion **26** preferably has at least four sides and a square lower end as further shown in
18 Figures 1 and 4 of the drawings. However, the drawings should not limit the size,
19 shape and structure of the body **20** as various other structures may be utilized.

20
21 As shown in Figures 1 and 4 of the drawings, the base portion **26** transitions
22 into the neck portion **22**. The neck portion **22** has a consistent cross section as best
23 illustrated in Figure 4 of the drawings. The neck portion **22** is connectable to a post **12**
24 either directly or by a coupler **14**.

25
26 An exemplary coupler **14** that may be utilized with the present invention is
27 illustrated in United States Patent No. 5,535,555. The post **12** may be comprised of
28 any conventional post **12** structure that supports an object such as a sign and the like.

1 **C. *Engaging Members***

2 One or more engaging members **28** may extend outwardly from the body **20** as
3 shown in Figures 7 and 8 of the drawings. The engaging members **28** are preferably a
4 flanged structure that surround the perimeter of the base portion **26**. The engaging
5 members **28** may have various shapes and sizes capable of limiting the climbing of the
6 body **20** when the post **12** experiences significant forces.

7
8 **D. *Elongate Member***

9 The elongate member **40** extends longitudinally within the body **20** from an
10 upper end **24** of the body **20** as shown in Figures 3 through 6b of the drawings. The
11 elongate member **40** is comprised of an elongate rigid structure that may be positioned
12 within an aperture within the body **20** or molded directly within the body **20**. The
13 elongate member **40** provides additional support to the body **20** to support a post **12**.

14
15 Figure 6a illustrates a rectangular cross section and Figure 6b illustrates a
16 circular cross section. Various other shapes, lengths and structures may be utilized to
17 construct the elongate member **40** other than illustrated in the drawings. The elongate
18 member **40** may be tubular, solid and the like.

19
20 A cap member **30** is preferably attached to the elongate member **40** adjacent to
21 the upper end **24** of the body **20**. The cap member **30** is preferably comprised of a flat
22 structure transversely attached to an end of the elongate member **40**. The cap member
23 **30** may include mounting apertures and other mounting structures for attaching a post
24 **12** directly to the same. The cap member **30** preferably has a cross section and size
25 similar to the upper end **24** of the body **20** as best shown in Figures 1 and 3 of the
26 drawings.

1 ***E. Operation***

2 In use, the user excavates a hole within the ground surface capable of receiving
3 the body **20**. The user then positions the body **20** within the hole and then fills the
4 hole about the body **20**. The post **12** is attached to the neck portion **22** of the body **20**
5 by a coupler **14** or other attachment structure. When a force such as wind, snow, rain,
6 vehicle, bicycle or the like applies a force upon the post **12**, the body **20** flexes
7 accordingly to absorb the initial impact of the force thereby reducing damage to the
8 post **12** and body **20**. The elongate member **40** within the body **20** moves within the
9 body **20** according to the forces applied to the post **12**. The tapered base portion **26**
10 prevents the body **20** from climbing and the plurality of sides prevent the body **20** from
11 twisting within the ground surface. The engaging members **28** provide additional
12 support with respect to potential climbing of the body **20** when encountering forces. If
13 the post **12** becomes damaged, the post **12** may simply be removed from the body **20**
14 without requiring unearthing the body **20** and then attaching a new post **12** to the body
15 **20**.

16
17 As to a further discussion of the manner of usage and operation of the present
18 invention, the same should be apparent from the above description. Accordingly, no
19 further discussion relating to the manner of usage and operation will be provided.

20
21 With respect to the above description then, it is to be realized that the optimum
22 dimensional relationships for the parts of the invention, to include variations in size,
23 materials, shape, form, function and manner of operation, assembly and use, are
24 deemed to be within the expertise of those skilled in the art, and all equivalent
25 structural variations and relationships to those illustrated in the drawings and
26 described in the specification are intended to be encompassed by the present invention.

27
28 Therefore, the foregoing is considered as illustrative only of the principles of
29 the invention. Further, since numerous modifications and changes will readily occur to

1 those skilled in the art, it is not desired to limit the invention to the exact construction
2 and operation shown and described, and accordingly, all suitable modifications and
3 equivalents may be resorted to, falling within the scope of the invention.